

27. An isolated nucleic acid molecule that encodes a plant desaturase e polypeptide and remains hybridized with the isolated polynucleotide of Claim 20 under a wash condition of 0.1X SSC, 0.1% SDS, and 65°C.
28. A cell or a virus comprising the polynucleotide of Claim 20.
29. The cell of Claim 28, wherein the cell is selected from the group consisting of a yeast cell, a bacterial cell, an insect cell, and a plant cell.
30. A transgenic plant comprising the polynucleotide of Claim 20.
31. A method for transforming a cell comprising introducing into a cell the polynucleotide of Claim 20.
32. A method for producing a transgenic plant comprising (a) transforming a plant cell with the polynucleotide of Claim 20, and (b) regenerating a plant from the transformed plant cell.
33. An isolated a desaturase polypeptide having a sequence selected from the group consisting of SEQ ID NOs: 2, 4, 6, 8 and 17.
34. A chimeric gene comprising the polynucleotide of Claim 20 operably linked to at least one suitable regulatory sequence.
35. The chimeric gene of Claim 34, wherein the chimeric gene is an expression vector.
36. A method for altering the level of plant desaturase polypeptide expression in a host cell, the method comprising:
- (a) Transforming a host cell with the chimeric gene of claim 33; and
- (b) Growing the transformed cell in step (a) under conditions suitable for the expression of the chimeric gene.